Remarks

This Amendment is responsive to the Office Action of **April 28, 2005**. Reexamination and reconsideration of **claims 4 and 6** is respectfully requested.

Summary of The Office Action

Claim 4 has been allowed. The allowability of claim 6 had been withdrawn.

The drawings were objected to under 37 CFR 1.83(a) based on the features of claim 6.

Claim 6 was rejected under 35 USC 112, second paragraph.

Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bohorquez (US 5357081) in view of Suzuki (US 4514737), Doluca (US 6208127), and Sculley et al. (US 6054874).

The Present Amendment

Claim 6 has been amended to recite that the selected switch is coupled between the internal power ground and the second terminal of the selected firing resistor. This is shown, for example, by figures 7 or 8, or page 17, lines 4-7 of the present application. Thus, no new matter has been added.

Drawing Objection and 35 USC 112, second paragraph, rejection

With the present amendment, the objection to the drawings should now be overcome. The language of claim 6 that is now amended was the basis for the drawing objection. The language has been corrected and the claimed features of claim 6 are shown in the drawings. See for example figure 4 (switch 52), figure 5 (switch 116n), figure 7 (switch 252n), or figure 8 (switch 352).

The same language of claim 6 was the basis for the 35 USC 112, second paragraph, rejection. The present amendment corrects this language and the rejection should now be overcome.

The Claim Patentably Distinguishes Over The References Of Record

For the present rejection, the office action assumed that the selected switch in claim 6 is coupled between the internal power supply path and the second terminal of the firing resistor. The assumption was nearly correct but claim 6 now recites that the switch is coupled between the internal power ground and the second terminal. Due to this difference, the cited reference of Scully is believed to no longer apply and thus the combination of references to not teach or suggest claim 6.

Additionally, the Office Action uses Suzuki to teach a power regulator for providing an offset voltage from the internal power supply path voltage, which Bohorquez fails to disclose (See Office Action, top of page 5). As will be explained below, Suzuki fails to teach this feature and fails to cure the shortcomings of Bohorquez. As shown in Figure 9, the power source voltage Vcc is supplied to the microcomputer 30 through level shift circuit 29, but an offset voltage is not provided as recited in claim 6. The microcomputer 30 outputs a driving pulse signal p and this is not an offset voltage.

Therefore, it is not obvious to one of ordinary skill in the art to modify Bohorquez in view of Suzuki to have a power regulator that provides an offset voltage from the internal power supply. The resulting combination fails to teach or suggest the elements of claim 6. Suzuki uses the power supply to provide the driving pulse signal p, not an offset voltage. Bohorquez produces voltage based on a feedback circuit, and not from the power supply. Thus, both references fail to teach or suggest providing an offset voltage from the internal power supply.

As a result, modifying the power regulator (e.g. power control 20) in Bohorquez to be connected to the power supply (as taught by Suzuki) would result in producing the driving pulse

signal p, and would not result in producing an offset voltage. There is nothing that teaches one of skill in the art to change the way Bohorquez produces its voltage. The output of power control 20 (figure 3) is produced from a feedback circuit, not the power supply. If the power supply is connected directly to the power control 20 in Bohorquez as purportedly suggested by Suzuki, then what. Suzuki does not teach or suggest using the power supply to provide an offset voltage as in claim 6.

Furthermore, changing the operation of the power control 20 in Bohorquez to output a voltage based on the internal power supply instead of the feedback circuit is an improper modification under MPEP 2143.01. Such a modification would change the principle of operation of the circuit and this is not permitted as advised by MPEP 2143.01. Thus, a combination of the references fail to render claim 6 prima facie obvious.

Looking to Suzuki more closely, Suzuki states, "The microcomputer 30 produces a drive pulse signal p, as shown in FIG. 11b, whose rise time is delayed with reference to the timing signal d3 for the interval mentioned." (see column 6, lines 59-63). Thus, when variations in Vcc are detected, the delay time and pulse width of the driving pulse signal p are controlled (see column 6, lines 56-59). No offset voltage is provided. Suzuki further repeats this functionality in column 7, lines 6-14, where it states "Thus, when a variation in the power source voltage Vcc occurs, it is possible to adjust the rise time and period of the excitation current flowing through the coil 14b of the solenoid, whereby the printing timing and printing pressure can be stabilized." (see column 7, lines 9-14). As such, the microcontroller 30 of Suzuki responds to variations in voltage by adjusting delay time and pulse width of signal p and is not concerned with providing an offset voltage. Signal p, supplied to the op amp 31, is not an offset voltage.

Therefore, Suzuki fails to teach or suggest a power regulator providing an offset voltage from an internal power supply as recited in claim 6. Thus, combining Suzuki with Bohorquez still fails to cure the shortcomings of Bohorquez and claim 6 patentably distinguishes over the references of record.

The other cited references of Doluca and Sculley also fail to cure the shortcomings of Bohorquez. Doluca fails to teach or suggest the self-calibration circuit of claim 6 and Sculley has been discussed above.

Conclusion

For the reasons set forth above, **claims 4 and 6** patentably and unobviously distinguish over the references of record and are now in condition for allowance. An early allowance of all claims is earnestly solicited.

Respectfully submitted,

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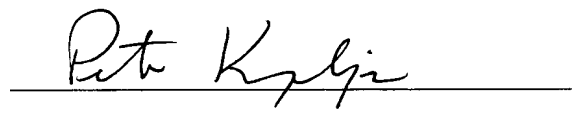

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